

All claims 1-16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fischer U.S. Patent 4,296,816 in view of Tramm U.S. Patent 5,810,263.

Initially, Applicant traverses the Examiner's statement that "Tramm discloses, in column 5, lines 12-14, a horizontal-type fire protection sprinkler having a K-factor of at least 3.5, or at least 5.0, or at least 7.0, or at least 10.5, or at least 13.0." Indeed, while those numbers are at the location indicated by the Examiner, the patent, in fact, describes only one complete sprinkler embodiment, the preferred embodiment having a nominal orifice diameter of 0.44 inch and nominal K-factor of 5.6 (column 6, lines 30-33). The deflector which is described following that quotation is designed specifically for use with the 5.6 K-factor sprinkler body. The performance of that deflector with a sprinkler body having an orifice of any other size, in particular, an orifice of a larger size, cannot be predicted. Accordingly, the patent does not describe any sprinkler having a K-factor greater than 5.6. Rather, what Tramm suggests is that the load bearing enhancements of the disclosed deflector might be incorporated into deflectors which may be ultimately designed for sidewall sprinklers which may be ultimately built with sprinkler bodies having larger than previously used orifices. The mere mention of larger orifices and K-factors for sidewall sprinklers in Tramm, without the disclosure of a complete working sprinkler having such larger K-factors which has satisfied either NFPA 13 or any fire protection test of Underwriters Laboratories, Inc. or Factory Mutual Research Corporation or the Loss Prevention Council Certification Board of Britain, which, using Tramm's own words, evaluates the performance of these and other fire protection products "to certify that the listed fire protection

products will satisfactorily perform their intended function when installed in accordance with the requirements of their listing”, fails to disclose a complete working embodiment of such sprinkler to one of ordinary skill in this art.

Furthermore, close reading of Tramm in light of the Background of automatic fire sprinklers disclosed in that patent indicates that Tramm is not inconsistent with the previously submitted Declaration of James Golinveaux. As noted in paragraph 9 of Mr. Golinveaux’ Declaration, “‘extended coverage’ sprinklers, including extended coverage sidewall sprinklers, have been allowed since 1973” and that further, “in 1983, the technical committee of NFPA-13 amended Section 1-2 to add the following sentence: ‘Nothing in this standard is intended to restrict new technologies or alternate arrangements, provided the level of safety prescribed by the standard is not lowered’”. In the same paragraph 9, Mr. Golinveaux further states:

However, on information and belief, no manufacturer or any other entity other than the assignee of the above-captioned application, successfully fire tested or even developed an orifice size larger than 17/32 inches and a K-factor greater than 8.0 for a sidewall )  
sprinkler. There is no evidence prior to the demonstration of Applicant’s invention that the use of larger orifices and lower minimum pressures would have provided a sidewall sprinkler that could effectively fight a fire.

Tramm does not lay claim to designing such a sprinkler and merely increasing the K-factors of the sprinkler bodies disclosed in Tramm or in Fischer provides no certainty that the resulting sprinkler would meet the minimum fire fighting requirements of the industry, namely the NFPA-13 standards or UL or FM fire tests.

The rejection of claims 5, 6, 10-12 and 14-16 are further traversed on the grounds that no one, neither one of ordinary skill in the art nor someone of greater than ordinary skill in the art, can predict with certainty what will happen to the distribution pattern of water distributed by the sprinkler of the Fischer patent were the pressure of the water supplied to that sprinkler reduced in an attempt to reduce its area of distribution. In particular, while the expected area of distribution would shrink, it is not certain whether any UL or FM test requirements would be met for any distribution other than 16 x 24 feet. In contrast to Fischer, the present application discloses two different embodiments of extended coverage sprinkler. One is rated for areas between 16 x 16 to 16 x 20 square feet and the other above 16 x 20 up to 16 x 24 square feet where pressurized to deliver only the required average minimum water densities of 0.15 and 0.20 gallons per minute per square foot over those areas that are required for ordinary hazard protection under NFPA-13. Nothing in Fischer indicates that the Fischer sprinkler is capable of delivering water other than in a pattern of 16 by 24 square feet. Further, it does not indicate that it is specifically capable of delivering water at ordinary hazard densities of at least 0.15 gallons per minute per square foot over that area.

*In re Aller* is not controlling in the present situation. Initially, the Examiner's characterization of *Aller* is incomplete. As is set forth in MPEP 2144.05, page 2100-100, *Aller* states "(W)here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." (Emphasis added.)

Determining whether Fisher or Tramm would provide acceptable fire protection if used with a sprinkler body having a K-factor greater than 8 would be anything but routine experimentation. In order to be acceptable, such sprinklers would have to pass full-scale fire tests designed by and conducted at UL or FM, tests for which no specifications existed before Applicant's present invention. The costs of each such full scale fire test for ordinary hazard protections runs tens of thousands of dollars and requires scheduling at such laboratories weeks and sometimes months in advance. Both organizations typically require such sprinklers to pass a battery of other tests including uniform water distribution tests before fire tests will even be conducted. If any sprinkler design fails any distribution or fire test, the tests must be repeated with any modified design. The tests are continued until the relevant organization is satisfied that a particular design passes all tests. That design and only that design is then approved for use. Such testing is anything but routine. However, once such testing does successfully occur and a standard for such test is created by Underwriters Laboratories or Factory Mutual, then such test standards are available to the industry. Typically, if simple water distribution tests can be met by later designed sprinklers, duplicating the water distribution of the first sprinkler(s) to successfully pass the full-scale fire tests, then fire tests are waived for such subsequent sprinklers and they are

approved for the same coverage(s) and operation(s) for which the sprinkler(s) which did successfully pass full-scale fire tests were approved. All one of ordinary skill in the art would do would be to try to satisfy such existing test requirements of the testing organizations, requirements that did not exist for larger than 8 K factor sidewall sprinklers until they were created for testing of the subject sidewall sprinklers.

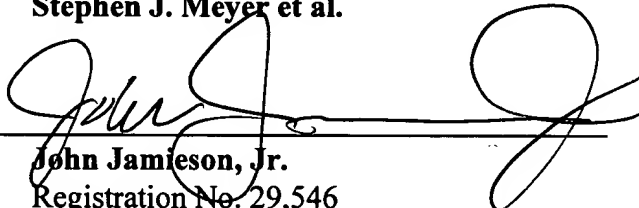
For the foregoing reasons, reconsideration and withdrawal of the rejections are respectfully requested.

Respectfully submitted,

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